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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,832	04/17/2001	Xie Shao	30430	9969

7590

03/12/2003

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EXAMINER

KEEHAN, CHRISTOPHER M

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 03/12/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/836,832

Applicant(s)

SHAO ET AL.

Examiner

Christopher M. Keehan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-28 and 30-71 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-9 and 11-20, 22-28, 30-34, 36-42, 44-71 is/are rejected.
- 7) ☒ Claim(s) 10, 21, 35 and 43 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

The rejection of claims 12-23 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to Applicant's amendments.

The rejection of claim 27 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention has been withdrawn due to Applicant's amendments.

Claim Rejections - 35 USC § 102

The rejection of claims 1-3, 5-10, 12-14, 16-21, 23, 24, 26-31, 33-35, 37-39, 41-43, 45, 46, and 48-63 under 35 U.S.C. 102(b) as being anticipated by Meador et al. (5,919,599) has been withdrawn due to Applicant's amendments.

The rejection of claims 11, 22, 25, 36, 44, and 47 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Meador et al. (5,919,599) has been withdrawn due to Applicant's arguments.

The rejection of claims 1-4, 12-15, 29-32, 37-40, and 45 under 35 U.S.C. 102(e) as being anticipated by Fahey et al. (6,207,787) has been withdrawn in light of a new rejection.

Note: claims 63 and 71 contain the same subject matter and 71 depends from 63; therefore, claim 71 does not further limit claim 63.

Response to Amendment

The declaration under 37 CFR 1.132 filed 1/3/03 is sufficient to overcome the rejection of claims 11, 36, and 51 based upon the comparison of Example 1 of the applied art Meador et al. and the instant application.

Claim Rejections - 35 USC § 102/103

Claims 2-5, 8, 9, 11-16, 19, 20, 22-28, 30-34, 36-42, and 44-51, 53, 54, 56-58, 60-62, and 64-71 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fahey et al. (6,207,787 B1). Regarding claims 11 and 36, Fahey et al. disclose comprising less than 0.3 weight percent strong acid. It is the Examiner's position that Fahey et al. do not appear to disclose any strong acid, which is less than 0.3 % by weight as instantly claimed. Fahey et al. appear to inherently disclose a composition that gives a spin bowl compatibility test result of greater than about 90% (col.6, lines 19-25, col.7, lines 45-53, and Example 1), and if not inherently disclosed, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to have achieved at least similar results as that as instantly claimed, because the materials of Fahey et al. are the same as Applicant's, and because similar processes can reasonably be expected to yield products which inherently have the same properties. *In re Spada* 15 USPQ 2d 1655 (CAFC 1990); *In re DeBlauwe* 222 USPQ 191; *In re Wiegand* 86 USPQ 155 (CCPA 195).

Regarding claims 12, 27, 37, and 49, Fahey et al. disclose a weak acid as defined by Applicant (col.3, lines 6-19) in an amount of 1-50% by weight (col.3, line 65-col.4, line 9). As stated above, as Fahey et al. do not appear to disclose any strong acid, it appears that this amount of weak acid is included in the instantly claimed range, as strong acid can be excluded. Although Fahey et al. do not specifically disclose a weak acid, the same component that Applicant is calling a weak acid is also a component in Fahey et al., and therefore the examiner considers the bisphenol A a weak acid for this reason.

Regarding claims 2, 4, 13, 15, 24, 30, 32, 38, 40, and 46, Fahey et al. disclose an anti-reflective coating composition comprising a polymer dissolved in a solvent system, the composition comprising bisphenol A (col.3, lines 6-19).

Regarding claims 5, 16, 33, and 41, Fahey et al. disclose adding a crosslinking agent (col.5, lines 45-47).

Regarding claims 8 and 19, Fahey et al. disclose a cyclic ketones (col.5, lines 39-42).

Regarding claims 9, 20, 34, and 42, Fahey et al. disclose a polymer selected from the group as instantly claimed (col.2, bottom of the page).

Regarding claims 22, 25, 44, and 47, Fahey et al. appear to inherently disclose a composition that gives a spin bowl compatibility test result of greater than about 90% (col.6, lines 19-25, col.7, lines 45-53, and Example 1), as set forth above, and if not inherently disclosed, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have achieved at least similar results as that as instantly claimed, because the materials of Fahey et al. are the same as Applicant's, and because similar processes can reasonably be expected to yield products which inherently have the same properties. *In re Spada* 15 USPQ 2d 1655 (CAFC 1990); *In re DeBlauwe* 222 USPQ 191; *In re Wiegand* 86 USPQ 155 (CCPA 195).

Regarding claims 23, 26, 45, and 48, Fahey et al. disclose comprising less than 0.3 weight percent strong acid. It is the Examiner's position that Fahey et al. do not appear to disclose any strong acid, which is less than 0.3 % by weight as instantly claimed.

Regarding claims 3, 14, 28, 31, 39, and 50, Fahey et al. disclose wherein the compound is chemically bonded with the polymer (col.3, line 65-col.4, line 9).

Regarding claims 51, 53, 54, 56-58 and 60-62, Fahey et al. disclose the instantly claimed process steps (col.5, line 56-col.6, line 37).

Regarding claims 64 and 66, Fahey et al. disclose adding 1 to 50% by weight of bisphenol A to the copolymer composition and do not appear to disclose a strong acid, which is included in the instantly claimed range (as stated above). Further, Fahey et al.

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disclose an exemplary composition comprising 0-15% by weight of the copolymer, of which 1 to 50% by weight of the bisphenol A is contained therein. If not inherently disclosed therein, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the weak acid bisphenol A in the amount as instantly claimed because Fahey et al. teach that adding the weak acid bisphenol A in amounts including the instantly claimed amounts, results in a coated article useful for microlithography applications resulting in a higher quality product.

Regarding claims 65 and 67, the same reasoning as set forth above for claims 22, 25, 44, and 47, also applies to claim 65, as the claimed subject matter is essentially the same.

Regarding claims 68-70, the same reasoning as set forth above for claims 56-58 and 60-62, also applies to claims 69-70, as the claimed subject matter is essentially the same.

Claim Rejections - 35 USC § 103

Claims 52, 55, 59, 63, and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahey et al. (6,207,787 B1). Regarding claim 52, although Fahey et al. do not specifically disclose spincoating, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have applied the coating by spincoating because spincoating is used extensively in the art to achieve an even coating for anti-reflective surfaces. Further, "even though product-by-process claims are limited by and defined by the process, determination of patentability is based in the product itself. The patentability of a product does not depend on its method of

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production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966.

Regarding claims 55, 59, 63 and 71, Fahey et al. disclose patterning a photoresist layer, which would have been obvious to one of ordinary skill in the art at the time the invention was made to have encompassed the instantly claimed steps, as these steps are commonly known steps in the art for patterning photoresist. Further, "even though product-by-process claims are limited by and defined by the process, determination of patentability is based in the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966.

Claims 6, 7, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahey et al. (6,207,787 B1) in view of Meador et al. Meador et al. (5,919,599). Fahey et al., as applied above, are as set forth and incorporated herein. Fahey et al. disclose adding crosslinking and stability agents (col.5, lines 45-47). Fahey et al. do not appear to specifically disclose adding the instantly claimed additives. Meador et al. provide the teaching of an antireflective coating composition with the ancillary components contained therein (col.6, lines 26-63 and col.7, lines 12-15). As these appear to be ancillary components, it would have been obvious to one of ordinary

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skill in the art at the time the invention was made to have added these components as taught by Meador et al. to the composition of Fahey et al. because Meador et al. teach that adding these components produces an anti-reflective coating having improved characteristics resulting in a higher quality product.

Allowable Subject Matter

Claims 10, 21, 35, and 43 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. A reasonable search of the prior art of record failed to reveal the limitations as set forth in these claims, specifically the independent claims limitations and a methacrylate polymer. Meador et al. do not appear to teach or disclose the spin bowl capacity as claimed, and do not teach or disclose the presence of a weak acid and a strong acid.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Keehan whose telephone number is (703) 305-2778. The examiner can normally be reached on Monday-Friday, from 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Dawson can be reached on 308-2340. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Christopher Keehan *cm*

March 7, 2003



Robert Lawson
Supervisory Patent Examiner
Technology Center 1700